

**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF TEXAS  
SHERMAN DIVISION**

R2 Solutions LLC,

Plaintiff,

v.

Civil Action No. 4:21-cv-00122

Jury Trial Demanded

Charles Schwab Corp.,

Defendant.

**COMPLAINT FOR PATENT INFRINGEMENT**

Plaintiff R2 Solutions LLC files this Complaint against Charles Schwab Corp. for infringement of U.S. Patent Nos. 8,190,610 (“the ’610 patent”) and 7,370,011 (“the ’011 patent”). The ’610 patent and ’011 patent are referred to collectively as the “patents-in-suit.”

**THE PARTIES**

1. Plaintiff R2 Solutions LLC (“R2 Solutions”) is a Texas limited liability company located in Frisco, Texas.

2. Upon information and belief, Defendant Charles Schwab Corp. (“Charles Schwab”) is a Delaware corporation with its corporate headquarters located at 3000 Schwab Way, Westlake, Texas 76262. Charles Schwab may be served with process through its registered agent, C T Corporation System, located at 1999 Bryan St., Ste. 900, Dallas, Texas 75201.

3. Charles Schwab’s presence in this District is significant. Its Westlake offices were recently designated as its corporate headquarters, and the number of employees in this District increased due to a merger between Charles Schwab and TD Ameritrade:

DALLAS — The Charles Schwab Corp.'s big move to North Texas is getting closer.

The financial services company announced Tuesday it expects to move its corporate headquarters designation from San Francisco to Hillwood's Circle T Ranch in Westlake, effective Jan. 1. The company has now closed its acquisition of TD Ameritrade, creating a massive player in the space.

Already, Schwab has more than 2,500 employees at its Westlake campus, and approximately 2,000 employees in Southlake are at TD Ameritrade's location, according to a spokesperson. The locale was picked and designed as a more centrally located hub.

<https://www.wfaa.com/article/money/economy/charles-schwab-gives-date-for-hq-designation-move-from-san-francisco-to-d-fw/287-ae139dab-7de8-47fd-a046-53190a2f3bad>.

#### **JURISDICTION AND VENUE**

4. This action arises under the patent laws of the United States, 35 U.S.C. § 101, *et seq.* This Court's jurisdiction over this action is proper under the above statutes, including 35 U.S.C. § 271, *et seq.*, 28 U.S.C. § 1331 (federal question jurisdiction), and 28 U.S.C. § 1338 (jurisdiction over patent actions).

5. This Court has personal jurisdiction over Charles Schwab in accordance with due process and/or the Texas Long Arm Statute because, among other things, Charles Schwab does business in this State by, among other things, "recruit[ing] Texas residents, directly or through an intermediary located in this state, for employment inside or outside this state." TEX. CIV. PRAC. & REM. CODE § 17.042(3):

## Jobs in Westlake

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**Recently Viewed Jobs**

Senior Software Engineer

**Saved Jobs**

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	<b>Investment Consultant, Prospect Conversion Team - Westlake, TX</b>
	Location: Westlake, Texas, United States
	Requisition ID: 2020-66222
	Category: Sales
	Position Type: Regular
	<b>Compliance Director: Bank Operations</b>
	Location: Westlake, Texas, United States; Phoenix, Arizona, United States; San Francisco, California, United States
	Requisition ID: 2021-67601
	Category: Legal & Compliance
	Position Type: Regular
	<b>HR Contact Center Representative</b>
	Location: Westlake, Texas, United States
	Requisition ID: 2021-67584
	Category: Human Resources and Administrative
	Position Type: Regular
	<b>Senior Team Manager, HR Contact Center</b>
	Location: Westlake, Texas, United States
	Requisition ID: 2021-67583
	Category: Human Resources and Administrative
	Position Type: Regular
	<b>Business Development Support Specialist, Schwab Advisor Services</b>
	Location: Chicago, Illinois, United States; Lone Tree, Colorado, United States; Westlake, Texas, United States; Minneapolis, Minnesota, United States; Phoenix, Arizona, United States
	Requisition ID: 2021-67556
	Category: Sales
	Position Type: Regular
	<b>Associate, Operations</b>
	Location: Westlake, Texas, United States
	Requisition ID: 2021-67572
	Category: Operations
	Position Type: Regular

<https://jobs.schwabjobs.com/location/westlake-jobs/33727/6252001-4736286-4741196/4>.

6. Further, this Court has personal jurisdiction over Charles Schwab because it has engaged, and continues to engage, in continuous, systematic, and substantial activities within this State, including the substantial marketing and sale of products and services within this State and this District. Indeed, this Court has personal jurisdiction over Charles Schwab because it has committed acts giving rise to R2 Solutions' claims for patent infringement within and directed to this District, has derived substantial revenue from its goods and services provided to individuals in this State and this District, and maintains regular and established places of business in this District.

7. Relative to patent infringement, Charles Schwab has committed, and continues to commit, acts in violation of 35 U.S.C. § 271, and has made, used, marketed, distributed, offered for sale, and/or sold infringing products and services in this State, including in this District, and has otherwise engaged in infringing conduct within and directed at, or from, this District. Such infringing products and services include: (1) the Big Data Analytics system built on the Apache Hadoop framework; and (2) the Charles Schwab interface allowing users to associate an account with a third-party service (such as Plaid). All such infringing systems are hereinafter referred to collectively as “Charles Schwab Systems.” Such Charles Schwab Systems have been, and continue to be, offered for sale, distributed to, sold, and used in this District, and the infringing conduct has caused, and continues to cause, injury to R2 Solutions, including injury suffered within this District. These are purposeful acts and transactions in this State and this District such that Charles Schwab reasonably should know and expect that it could be haled into this Court because of such activities.

8. Venue is proper in this District under 28 U.S.C. §§ 1391 and 1400(b) because Charles Schwab has regular and established places of business in this District and a substantial part of the events or omissions giving rise to the R2 Solutions claims occurred in this District. Charles Schwab’s regular and established places of business in this District include, at least, its Westlake, Texas headquarters. Indeed, Charles Schwab conducts business in this District, including marketing and selling the Charles Schwab Systems to customers located in this District. Moreover, Charles Schwab’s activities, or the actions of the Charles Schwab Systems, in the District constitute one or more steps of the methods claimed in the patents-in-suit.

## **BACKGROUND**

9. The patents-in-suit were filed by Yahoo! Inc. (“Yahoo!”) between 2006 and 2009. At the time, Yahoo! was a leading Internet communications, commerce, and media company. Yahoo! invested billions of dollars in research and development over this period, filing hundreds of patent applications each year to cover the innovative computing technologies emerging from its expansive research and development efforts.

10. Yahoo! began as a directory of websites that two Stanford graduate students developed as a hobby. The name “Yahoo” stands for “Yet Another Hierarchical Officious Oracle,” a nod to how the original Yahoo! database was arranged hierarchically in layers of subcategories. From this initial database, Yahoo! would develop and promulgate numerous advancements in the field of data storage and recall.

11. For example, in 1995, Yahoo! introduced Yahoo! Search. This software allowed users to search the Yahoo! directory, making it the first popular online directory search engine. This positioned Yahoo! as the launching point for most users of the World Wide Web. By 1998, Yahoo! had the largest audience of any website or online service.

12. However, the early iterations of Yahoo! Search did not operate like a modern search engine because it was only a directory. Yahoo! Search first integrated a Web crawling engine in 2000. Yahoo! Search used Google’s Web crawling engine from 2000–2004. During this time, Yahoo! was developing its own Web search technologies. Yahoo! deployed its own Web crawler in early 2004. The engine, known as Slurp, allowed Yahoo! to collect documents from the Web and build a searchable index. The patents-in-suit relate to innovations associated with Yahoo! Search developed and implemented during this period, which enabled Yahoo! to become Google’s biggest competitor in the search engine space.

### **THE PATENTS-IN-SUIT**

13. The '610 patent is entitled, "MapReduce for Distributed Database Processing." The '610 patent lawfully issued on May 29, 2012 and stems from U.S. Patent Application No. 11/539,090, which was filed on October 5, 2006. A copy of the '610 patent is attached hereto as Ex. 1.

14. The '011 patent is entitled, "Financial Information Portal." The '011 patent lawfully issued on May 6, 2008 and stems from U.S. Patent Application No. 09/896,438, which was filed on June 28, 2001. The '011 patent claims priority to Provisional Application No. 60/214,662, which was filed on June 28, 2000. A copy of the '011 patent is attached hereto as Ex. 2.

15. R2 Solutions is the owner of the patents-in-suit with all substantial rights, including the exclusive right to enforce, sue, and recover damages for past and future infringements.

16. The claims of the patents-in-suit are directed to patent eligible subject matter under 35 U.S.C. § 101. They are not directed to an abstract idea, and the technologies covered by the claims consist of ordered combinations of features and functions that, at the time of invention, were not, alone or in combination, well-understood, routine, or conventional.

17. Indeed, the specifications of the patents-in-suit disclose shortcomings in the prior art and then explain, in detail, the technical way the claimed inventions resolve or overcome those shortcomings. For example, the '610 patent explains that "conventional MapReduce implementations do not have facility to efficiently process data from heterogeneous sources" and that "it is impractical to perform joins over two relational tables that have different schemas." '610 patent at 3:9–20. To solve these problems, the '610 patent discloses an invention where user-configurable MapReduce functions are applied to data from heterogeneous data sources (having

different schema), followed by application of a reduce function on intermediate data based on a common key. As the specification explains:

[T]he MapReduce concept may be utilized to carry out map processing independently on two or more related datasets (e.g., related by being characterized by a common key) even when the related data sets are heterogeneous with respect to each other, such as data tables organized according to different schema. The intermediate results of the map processing (key/value pairs) for a particular key can be processed together in a single reduce function by applying a different iterator to intermediate values for each group. In this way, operations on the two or more related datasets may be carried out more efficiently or in a way not even possible with the conventional MapReduce architecture.

*Id.* at 8:47–58.

18. Such a solution is embodied, for example, in Claim 1 of the '610 patent:

A method of processing data of a data set over a distributed system, wherein the data set comprises a plurality of data groups, the method comprising:

partitioning the data of each one of the data groups into a plurality of data partitions that each have a plurality of key-value pairs and providing each data partition to a selected one of a plurality of mapping functions that are each *user-configurable* to independently output a plurality of lists of values for each of a set of keys found in such map function's corresponding data partition to form corresponding intermediate data for that data group and identifiable to that data group, *wherein the data of a first data group has a different schema than the data of a second data group* and the data of the first data group is mapped differently than the data of the second data group so that different lists of values are output for the corresponding different intermediate data, *wherein the different schema and corresponding different intermediate data have a key in common*; and

reducing the intermediate data for the data groups to at least one output data group, including processing the intermediate data for each data group in a manner that is defined to correspond to that data group, so as to result in a *merging of the corresponding different intermediate data based on the key in common*,

wherein the mapping and reducing operations are performed by a distributed system. (emphases added).

19. The inventions described and claimed in the '610 patent improve the speed, efficiency, effectiveness, and functionality of computer systems. Moreover, the inventions provide an improvement in computer functionality rather than economic or other tasks for which a computer is used in its ordinary capacity. For example, the '610 patent states that the disclosed inventions “enhance[] the utility of the MapReduce programming methodology.” *Id.* at Abstract, 1:31–33, 1:66–2:2.

20. The '610 patent specification goes on to explain that “[t]he intermediate results of the map processing (key/value pairs) for a particular key can be processed together in a single reduce function by applying a different iterator to intermediate values for each group.” *Id.* at Abstract, 1:37–39, 2:4–8. And the specification discusses the use of multiple processors to perform processing functions in parallel. *See id.* As a result, computer functionality is improved. *Id.* at 1:42–44.

21. Additionally, the claimed inventions provide for more dynamic, customizable, and efficient processing of large sets of data. *See, e.g., id.* at 2:58–61, 4:18–22. The inventions provide optimization, which increases efficiency and reduces processor execution time. *See id.* at 2:64–67 (explaining that the claimed invention “can make the processing of the output data more efficient and/or convenient”). As the specification describes, the combiner function in the claimed invention “helps reduce the network traffic and speed up the total execution time.” *Id.* at 3:1–8.

22. The specification also discusses the use of configurable settings to reduce processing overhead. *See, e.g., id.* at 4:60–62, 5:33–39.

23. The specification of the '011 patent likewise details how the invention embodied in the patent's claims resolve technical shortcomings in the prior art. As the '011 specification

explains, users hoping to obtain account information from a financial institution by accessing an HTTP server could not securely access or monitor all of their data in one place if those users had different accounts, even with the same institution. '011 patent at 1:40–47. Two prior-art portals emerged to provide users with a more desirable level of customization: (1) the “stand-in” system; and (2) the “client-handoff” system. *See id.* at 1:54–3:15. However, both prior-art portals have notable technical drawbacks, for which the inventions claimed in the '011 patent provide technical solutions.

24. In a “stand-in” system, “a portal operator stands in place of the user to get data from the financial institution.” *Id.* at 1:54–56. The user could set up an account with a portal operator and establish a user identification and password that authenticated the user with the portal. *Id.* at 2:5–8. The user could then provide his or her credentials (e.g., a username and password) for connecting to a financial institution server via the portal operator’s server, along with other relevant information (e.g., a domain name, URL, or IP address). *Id.* at 2:8–12. This information was then stored by the portal operator and later used to connect to the financial institution on the user’s behalf if the user requested information from the portal. *Id.* at 2:12–17. A major drawback to this approach was that the financial institution generally could not control, via any technical means, what the portal system did with the user’s account when the portal system logged on as the user. *Id.* at 2:29–31. Thus, if the security of the portal server was compromised and a database of user IDs and passwords were stolen, the attacker could have accessed the bank accounts of those users without the financial institution being able to control the individual accounts or even determine that anything was amiss. *Id.* at 2:32–35.

25. The other approach available at the time was a client-handoff system. *Id.* at 2:40–42. The user of a client-handoff system would log onto a financial institution system using an

interactive client, such as a browser plug-in, that retrieved some user information from the financial institution and provided it to the portal server for storage. *Id.* at 2:42–46. While this avoided the risk of maintaining sensitive user authentication data at the portal server, it resulted in stale user data. *See id.* at 3:6–15. This was because portal information was “only current as of the last time the user logged onto the financial institution server and performed a transfer of data to the portal server.” *Id.* at 3:11–15.

26. To solve these technical problems, the '011 patent provides a technical solution in the form of a novel portal authentication system. In one embodiment, the '011 patent provides a dual authentication protocol executed by portal servers utilizing a trusted link to a non-portal server. The dual-authentication protocol utilized by the portal enhances security of the system by generating and utilizing portal authentication data, which differs from the authentication data utilized by a user's institution (and the prior art systems). As the specification explains:

In one such portal information system, a financial institution or other information maintainer, has a list of its account holders that also have accounts with a portal and have agreed to link their portal account and user account with the financial institution or other information maintainer. When a user logs onto the user's portal account, the portal server can request information from the user account over a trusted link to the financial institution or other information maintainer. The portal can request data for a particular user over the trusted link or can request bulk data for all users, using portal authentication data, as opposed to user authentication data. In the preferred embodiment, the actions allowed on a user account by the portal authentication data are more restrictive than the actions allowed by the user authentication data.

*Id.* at 3:20–40.

27. Such an embodiment is exemplified in Claim 7 of the '011 patent:

A computer readable medium storing instructions for execution in a computer, the medium when executed by a computer performing the method comprising: accepting a connection at an institution server, the connection initiated by a user following a link from a portal, *the link including a user identification*; responsive to the connection, *enabling the user to authenticate with the institution server using user-institution authentication data*; responding to the authentication by *associating the user identification with the portal*; and servicing a request by the portal, after authenticating the portal using portal authentication data, by providing, to the portal, data of the user at the institution, *wherein the user-institution authentication data and the portal authentication data are not the same data*.

(emphases added).

28. At a minimum, the claims of the '011 patent are directed to solutions to computer-functionality problems. For example, the '011 patent claims improvements to computer functionality that have the specificity required to transform a claim from one claiming only a result to one claiming a way of achieving it.

29. The inventions claimed in the '011 patent provide a non-abstract improvement in computer functionality by improving network security and by improving the functioning of a portal server by use of a specific technique that departs from earlier approaches to solve a particular computer problem. As discussed above, "stand-in" systems pose a security risk because the portal must store user login data for each financial account in order to access the account data on behalf of the user. Unlike conventional "stand-in" systems where a user provides a portal with the user ID and password that the user would use to directly retrieve information from a financial institution, and then relies on the portal to interact with the financial institution using that user ID and password in the user's stead, the '011 patent claims a portal "wherein the user-institution

authentication data and the portal authentication data are not the same.” *Id.* at claim 1. During prosecution, the patent examiner acknowledged that the claims improve portal security by the use of a specific technique that departs from earlier approaches to solve a particular computer problem. The examiner explained in the Notice of Allowance:

With the usage of a dual authentication protocol, security is enhanced. Under the conventional system should unauthorized personnel infiltrate the information portal they could conceivably obtain a user’s userid and password from the portal system, allowing them authorized access to user information at a financial institution. However, the instant application does not require storage of such information at the information portal, rather the information portal possesses a separate and distinct userid and password for access to user information at a financial institution. Usage of a separate and distinct userid and password for authentication of the information portal allows the financial institution server to establish separate security protocols for the information portal, such as limiting the actions that the information portal can take on the user’s behalf.

Ex. 5 at 3.

30. In turn, the improved security allows the inventions claimed in the ’011 patent to directly address the internet-centric challenge of providing up-to-date information on the status of financial accounts without risking exposure of sensitive user data. User login information only provides security if malicious parties do not have a way of determining the information. Each time a user’s account login credentials are saved in a new location there is a new risk that malicious parties can infiltrate that location and obtain the user’s login credentials. The specification of the ’011 patent explains that previous approaches to reduce such security threats relied on a client-handoff system. *See* ’011 patent at 2:42–46.

31. Unlike such systems, which require users to repeat the authentication process with the financial institution each time the user wants the portal to receive updated information from

the financial information, the dual authentication protocol claimed in the '011 patent allows the portal to obtain periodic updates from the financial institution without requiring the user to submit its financial institution login credentials again. *See id.* at 5:44–62. Claim 7 explains that after the user has the opportunity to authenticate with the institution server, data requests submitted to the institution server by the portal server requires “authenticating the portal using portal authentication data.” Importantly, the claimed “portal authentication data” is different from the “user-institution authentication data.” Thus, after the user’s initial login with “user-institution authentication data,” “the portal server can make a trusted server-to-server connection to the financial institution server to get information for one or more signed up users.” *Id.* at 5:56–60.

32. In light of the foregoing, the '011 patent claims are more complex than merely reciting the performance of a known business practice on the Internet, and are better understood as being necessarily rooted in computer technology in order to solve a specific problem in the realm of computer networks.

33. In essence, each of the patents-in-suit relate to novel and non-obvious inventions in the fields of search engines, database structures, and graphical user interfaces.

**COUNT I**  
**INFRINGEMENT OF U.S. PATENT NO. 8,190,610**

34. R2 Solutions incorporates paragraphs 1–13, 15–22, and 33 herein by reference.

35. This cause of action arises under the patent laws of the United States, and in particular, 35 U.S.C. §§ 271, *et seq.*

36. R2 Solutions is the owner of the '610 patent with all substantial rights to the '610 patent, including the exclusive right to enforce, sue, and recover damages for past and future infringements.

37. The '610 patent is valid and enforceable and was duly issued in full compliance with Title 35 of the United States Code.

***Direct Infringement (35 U.S.C. § 271(a))***

38. Charles Schwab has directly infringed and continues to directly infringe one or more claims of the '610 patent in this District and elsewhere in Texas and the United States.

39. To this end, Charles Schwab has infringed and continues to infringe, either by itself or via an agent, at least claims 1–5, 17–21, 33–34, and 40–41 of the '610 patent by, among other things, making, offering to sell, selling, testing and/or using the Big Data Analytics system built on the Apache Hadoop framework.

40. Attached hereto as Ex. 3, and incorporated herein by reference, is a representative claim chart detailing how Charles Schwab infringes the '610 patent.

41. Charles Schwab is liable for its infringements of the '610 patent pursuant to 35 U.S.C. § 271.

***Damages***

42. R2 Solutions has been damaged as a result of Charles Schwab's infringing conduct described in this Count. Charles Schwab is, thus, liable to R2 Solutions in an amount that adequately compensates it for Charles Schwab's infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

**COUNT II**  
**INFRINGEMENT OF U.S. PATENT NO. 7,370,011**

43. R2 Solutions incorporates paragraphs 1–12, 14–16, and 23–33 herein by reference.

44. This cause of action arises under the patent laws of the United States, and in particular, 35 U.S.C. §§ 271, *et seq.*

45. R2 Solutions is the owner of the '011 patent with all substantial rights to the '011 patent, including the exclusive right to enforce, sue, and recover damages for past and future infringements.

46. The '011 patent is valid and enforceable and was duly issued in full compliance with Title 35 of the United States Code.

***Direct Infringement (35 U.S.C. § 271(a))***

47. Charles Schwab has directly infringed and continues to directly infringe one or more claims of the '011 patent in this District and elsewhere in Texas and the United States.

48. To this end, Charles Schwab has infringed and continues to infringe, either by itself or via an agent, at least claims 7 and 9–11 of the '011 patent by, among other things, making, offering to sell, selling, testing and/or using databases and servers hosting the Charles Schwab interface allowing users to associate an account with a third-party service (such as Plaid).

49. Attached hereto as Ex. 4, and incorporated herein by reference, is a representative claim chart detailing how Charles Schwab infringes the '011 patent.

50. Charles Schwab is liable for its infringements of the '011 patent pursuant to 35 U.S.C. § 271.

***Damages***

51. R2 Solutions has been damaged as a result of Charles Schwab's infringing conduct described in this Count. Charles Schwab is, thus, liable to R2 Solutions in an amount that adequately compensates it for Charles Schwab's infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

**DEMAND FOR A JURY TRIAL**

R2 Solutions demands a trial by jury on all issues triable of right by jury pursuant to Rule 38 of the Federal Rules of Civil Procedure.

**PRAYER FOR RELIEF**

R2 Solutions respectfully requests that this Court enter judgment in its favor and grant the following relief:

- (i) Judgment and Order that Charles Schwab has directly infringed one or more claims of each of the patents-in-suit;
- (ii) Judgment and Order that Charles Schwab must pay R2 Solutions past and future damages under 35 U.S.C. § 284, including supplemental damages arising from any continuing, post-verdict infringement for the time between trial and entry of the final judgment, together with an accounting, as needed, as provided under 35 U.S.C. § 284;
- (iii) Judgment and Order that Charles Schwab must pay R2 Solutions reasonable ongoing royalties on a go-forward basis after Final Judgment;
- (iv) Judgment and Order that Charles Schwab must pay R2 Solutions pre-judgment and post-judgment interest on the damages award;
- (v) Judgment and Order that Charles Schwab must pay R2 Solutions' costs;
- (vi) Judgment and Order that the Court find this case exceptional under the provisions of 35 U.S.C. § 285 and accordingly order Charles Schwab to pay R2 Solutions' attorneys' fees; and
- (vii) Such other and further relief as the Court may deem just and proper.

Dated: February 9, 2021

Respectfully submitted,

*/s/ Edward R. Nelson III*  
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